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DISEASES OF THE NERVOUS SYSTEM

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

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DISEASES of the NERVOUS SYSTEM

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

EXPERIMENTAL PSYCHIATRY IV
Hallucinogens: Tools in Experimental Psychiatry

MAX RINKEL, M.D., ROBERT W. HYDE, M.D.,
and HARRY C. SOLOMON, M.D.
Boston, Massachusetts

Hallucinogen is the widely accepted name that Hoffer, Osmond and Smythies[10] have given to a group of chemicals whose common elements are presented. They produce hallucinations and contain the indole ring in their molecule. Of the few chemically identified hallucinogenic compounds, mescaline and the diethylamide of d-lysergic acid have been preeminently used as tools in experimental psychiatry. In previous papers,[3,9,13,14,15,16] we have defined "experimental psychiatry" as the comprehensive study of experimentally produced psychotic-like states and pointed up the importance of a procedure that allows for the experimental reproduction of such mental conditions in man. The experimental reproduction, in recent years, of psychotic-like manifestations by means of synthetic mescaline and the partially synthetized diethylamide of d-lysergic acid (LSD) has brought the problem of psychosis once again into the focus of biochemical considerations.

In 1952, W. Block[1,2] and associates reported the result of experiments with mescaline which had been made radioactive by the incorporation of a 14C-isotope into the side-chain of the molecule. Following the intraperitoneal injection of this radioactive mescaline into mice, its greatest accumulation was found in the liver and kidneys, the smallest concentration in the brain and spinal cord. Studies on the distribution of radioactivity in the organs in relation to time, established the fact that mescaline had completely disappeared from the brain and spinal cord at the time when in man psychic symptoms begin to appear. The authors assumed (on the basis of these and many other observations) that the hallucinations which follow mescaline administration to humans are not caused by the mescaline itself, but other substances, the formation of which requires time. Further pharmacological studies led them to the assumption that mescaline enters into a new protein bound combination and that this chemical process takes place in the liver. Patzig[12] and associates, in logical consequence, assumed that it is this new compound which causes the mental phenomena of mescaline administration and proposed a biochemical concept of the schizophrenic process in which the liver played an important part. Thus, it appeared that the hypothetical endogenous substance "M" was found that would biochemically explain the origin of psychosis.

The substance "M" was a postulate of H. Osmond and J. Smythies[11] who, in the same year, in England, published the remarkable paper on "a new approach to the schizo-

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Presented at the Research Conference on Psychopharmacology at McGill University, Montreal, Canada, on March 26, 1955.

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phrenia problem." These authors, unaware of the work of Block[1,2] and Patzig,[12] studied the psychic effects of synthetic mescaline and intuitively became aware of the chemical similarity of the structural formula of the mescaline and adrenaline molecule. With admirable imagination, they speculated that new, mental-symptom-producing compounds would be formed if the normal transmethylation which converts nor-adrenaline into adrenaline were directed from the sidechain to the nucleus itself. Naturally, the authors were fully conscious of the fact that no evidence existed to support such speculation; however, they had opened new avenues of thinking and research. After having joined the research group of Dr. A. Hoffer,[10] in Canada, and, under his direction, they proceeded with the search for the hypothetical substance "M." Having clearly seen and understood the chemical relationship between mescaline and adrenaline, the authors directed their investigation to metabolites of the adrenaline cycle. Of the metabolites of the adrenaline cycle, adrenochrome, an oxidation product of adrenaline, was already known and its molecular formula well established by the work of Green and Richer,[5] in 1937. Hoffer and his associates studied the pharmacological and psychic effects of this compound and published their results in 1954[10] and 1955.[17] In discussing their observations, the authors state that "adrenochrome is the first substance thought to occur in the body which has been shown to be a hallucinogen," and suggested that "adrenochrome or a similar substance plays a part in the genesis of schizophrenia."

Our own studies[3,9,13,14,15,16] of experimentally reproduced mental phenomena began in 1949. We used especially the diethylamide of d-lysergic acid (LSD) and reported first results in May 1950, at the annual meeting of the American Psychiatric Association. In a number of subsequent papers, we reported our observations on clinical and physiochemical effects of LSD, including a report by Hoagland[9] and us on "comparisons of adrenocortical function and urinary phosphate excretion in schizophrenia and in LSD-induced psychotic episodes in normal persons." Our experiments, on more than one hundred normal volunteers, most of whom received one microgram of LSD per kilogram body weight, indicated strongly that predominantly the adrenaline cycle and the pituitary-adrenocortical adaptation system were involved in the causation of the clinical and physio-chemical phenomena. Of the physiological phenomena, following the administration of LSD, most consistent was the occurrence of dilated pupils, an observation which has been confirmed by most authors. Polygraph studies, in combination with psychodynamic interviews, revealed that LSD caused an increased rate of respiration and a greater variability in length of the respiration cycle than was found on control days. It also caused more stable heart rate, even though its rate was increased. The systolic blood pressure, following a psychodynamic interview, was somewhat higher than on control days when the reverse was observed. On pharmacodynamic examination of the autonomic nervous system (A.N.S.), we found that the response of the systolic blood pressure to intravenous synthetic epinephrine, with few exceptions, was considerably reduced when the subject had previously received LSD, as compared with the reaction of the same subject on control days. It is interesting to note that a striking antagonism between LSD and adrenaline was reported by Graham and Alaa iddeen Khalidi[4] of the Dept. of Pharmacology of the Royal Faculty of Medicine, Bagdad. They had studied this antagonism pharmacologically on animals and isolated tissue preparations and reported that LSD antagonized both the inhibitory and stimulating action of adrenaline. A similar antagonism between LSD and adrenaline could also speculatively be interpreted into Witt's[18] spider experiments. The illustrations showed that, in contrast to other chemicals, under the influence of LSD the tensile of the web became much thinner although the geometrical accuracy of the web appeared more nearly perfect. In view of the commonly known fact that adrenaline is a major chemical constituent of the spider web, the antagonism of LSD and adrenaline may explain the decrease in the tensile quality of the spider web produced under the influence of LSD.

In view of our observations of the relationship of LSD and adrenaline reaction, and

on the basis of the various reports in the literature, our thoughts were inevitably directed towards the assumption that LSD may interfere with the normal course of the adrenaline metabolism. It was further assumed that such interference may have brought about the formation of a noxious metabolite of the still not fully explored adrenaline cycle. Such a noxious metabolite may possibly be the actual cause of the mental phenomena observed in the transitory psychotic-like LSD reaction. Experiments, here and abroad, on the distribution and excretion of 14C-labelled and unlabelled LSD in mice and rats are presently in progress. Results, from unpublished data, seem to be promising, and may well provide further evidence for the assumption of the origination of a new noxious agent as the result of LSD administration.

Research goes in the direction of pinpointing this noxious, psychosis-producing adrenaline metabolite. Hoffer and associates[10,17] have been investigating adrenochrome, and reported psychic and physiological effects of this chemical. We also have started experiments with pure adrenochrome, which we most recently received by courtesy of Dr. I. Slater, of the Lilly Research Laboratories, the results of which will be reported in due time. This pure substance, however, was not available to us some time ago when, at first, we used the commercially produced semi-carbazone derivative of adrenochrome, being fully aware of the commonly known fact that even slightest changes in the molecular structure of a chemical may materially alter its effect. The contrast between our negative results and the positive results found by Hoffer and associates must be considered in the light of this fact.

It is of interest to note that the same year (1937) Richter and Green's report on adrenochrome was published, P. Heirman and associates[6,7,8] reported still another adrenaline metabolite which they named adrenoxine. They had obtained this new chemical by carrying the enzymatic oxidation of adrenaline beyond the adrenochrome level. Although the molecular structure of adrenoxine has not yet been established, Heirman's description of its physiological effects showed many similarities with the physiological effects of LSD, especially the mydriatic effect, which in both cases is apparently produced by stimulation of the sympathetic system. It is worth noting that the mydriatic effect of adrenoxine has been described as being 10,000 times more powerful than that of epinephrine. We, therefore, suggested in our paper on "the clinical and physio-chemical observations in experimental psychosis," that "the similarities of physiological effects of adrenoxine, LSD and mescaline may seem to warrant the study of the effect of adrenoxine on man. Adrenoxine—may well be the adrenaline metabolite which may further advance our knowledge of the chemical relationship to the origination of psychosis." This formulation seems to be quite in agreement with Hoffer and associates' statement that "adrenochrome or a similar substance plays a part in the genesis of schizophrenia."

Whatever the immediate outcome of these researches will be, the evidence already available indicates that the adrenal cycle, and possibly also the adaptation mechanisms of the pituitary-adrenocortical axis, may well play an important part in the development of psychoses and "points up the necessity of relating the various observations in a consistent theory to further more constructive research in this field. Such well-grounded theoretical hypotheses make explicit the need of further careful experimentation," for which hallucinogens have proven themselves as effective tools.

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Management of Psychological Issues In Conjunction with Physical Treatment

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We have observed that while certain patients may have the same clinical diagnosis, one will do very well with physical treatment, while another has poor results. In an attempt to fathom this puzzling inconsistency we have studied the psychological state of patients at the time treatment was applied. All these cases were worked with psychotherapeutically before physical treatment was instituted, and following physical treatment they were again seen in psychotherapy.

Among the motives that impel patients to come to our offices and clinics, anxiety is the central issue. Around anxiety are grouped other issues in yet to be defined roles of secondary or etiologic significance, possibly in vicious cycle relationships. These complementary issues, defined as dynamic constellations of feeling, must be dealt with in conjunction with the relief of the anxiety. These always include the issue of the meanings to the patient of his illness and of the treatment prescribed and often include, in varying degrees of prominence, such things as (a) the issue of perfectionism and the subsequent guilt resulting from failure to attain impossible perfectionistic goals, (b) the issue of envy ("Why am I not as good or as competent as other people?"), and (c) the issue of acceptance by others ("I am unloved and unappreciated"). Regardless of the method of therapy, such issues—such dynamic constellations of feeling—have to be dealt with understandingly during both treatment and follow-up.

The physician's manner of using physical treatment—or any treatment for that matter—may relieve or aggravate these dynamic

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issues and can significantly affect the outcome for better or for worse. Thus it comes about that a given method of treatment, such as shock therapy, may fail in certain depressions in spite of its usually favorable effect in these cases. Conversely, shock treatment may bring about surprising recoveries in conditions where its routine application has generally not proven helpful—for instance, in severe obsessive-compulsive states.

It is important to keep in mind that in the chain of causality of mental disturbance anxiety itself may act as both symptom and as etiology, confirming Frank's[1] view that symptomatic treatment of anxiety is at the same time etiologic treatment, a fact which explains the frequently so profound effects of physical treatment of mental disease when it succeeds in relieving the anxiety. This view is not sufficiently recognized today, though Fenichel[2] stated succinctly in his discussion of anxiety-hysteria (pp. 194-195) that anxiety originally "intended to prevent a traumatic state, actually induces one." This observation is of profound importance in explaining the far-reaching effect which relief from anxiety alone has upon the myriad secondary manifestations in mental disease. It follows then that the first step in the treatment of a patient with mental disease should be relief of excessive anxiety. Because of its basic key importance, this step alone sometimes suffices in bringing about a thorough-going recovery, for it frees the ego to once more grapple realistically with its problems.

The concept of anxiety is used throughout this paper in its widest sense as unpleasant tension or affect, conscious or unconscious, and includes (a) warning or alerting anxiety (anxiety with hope of escape that may optimally be a spur to problem-solving or may simply continue to reverberate, i.e. anxiety in the narrower sense of the word), (b) traumatizing anxiety (felt as conscious fear or appearing as panic), (c) overwhelming anxiety without hope of escape (depression); on the physiological level, it includes both epinephrine-precipitable anxiety as well as anxiety that cannot be precipitated or aggravated by epinephrine.

The Relief of Anxiety as the Central Measure: The Importance of Considering the Subjective Meanings of The Illness and of the Treatment.

A 38-year-old male consulted us in a state of severe anxious-depressive panic with obsessive-compulsive features, of three months duration, which appeared as a particularly violent upheaval in the course of a chronic obsessive-compulsive neurosis of 20 years' duration. In his reality relationships he had very little bothering him. He was happily married, and though he had no children had apparently resigned himself to that fact. He was socially popular and had many interests and activities, such as fishing and hunting. Although not completely happy on his job, he was considered excellent at it. However, he had become intolerant of anxiety, i.e. excessively sensitive to any anxious feelings since an attack of pneumonia at age 18, for always in close association with his feelings of anxiety were blasphemous thoughts which in turn frightened him to the point of a traumatic neurosis that ultimately coalesced into an obsessive-compulsive state with religious-blasphemous ideas, and with fears of punishment, infection and disease. A vicious circle was thus induced which had diverted him from solving real life problems, in this case problems arising from job dissatisfaction; and had led to panic.

When he was seen in this acute panic state psychotherapy was attempted but met with little success. It was therefore decided to administer electroshock to alleviate the panic, and thus make the patient accessible to further psychologic investigation. Such an outcome was rendered likely by the fact that his anxiety was not of the epinephrine-precipitable type, as ascertained by the Funkenstein test. Because he had a brother who years ago had a similar but much milder psychoneurosis that had apparently responded favorably to shock treatment, the patient was not startled nor frightened when shock treatment was recommended for him. He did not assume it meant he had a severe illness, but rather he welcomed it as hope of relief from his panic.

Eight convulsive electroshock treatments proved surprisingly effective. They seemingly interrupted the vicious cycle of his be-

ing frightened by his own anxiety. Not only did they completely relieve his acute panic, but there followed virtual recovery from the obsessive-compulsive state from which he had been suffering for twenty years. He retained some reality-based anxiety about his job situation, which was then dealt with in psychotherapy. Several months later he changed jobs to one that was a little less demanding. He also remained somewhat obsessive in his work habits, needing to check and re-check two or three times, but that was the extent of the residual neurosis. The blasphemous ideas and the fears of infection and sickness had entirely disappeared, and he has remained free from them, for a period now approaching two years.

This rather unusual case is one in which an obviously severe obsessive-compulsive neurosis of many years' duration was brought to a cure, or what practically amounted to a cure, by electroshock—since nothing but minor obsessive attitudes remained in the background, to which the patient attached no importance whatsoever, for they were valuable in his job and held no implications of inconvenience or hardship to him at all. In short, his obsessive character remained but all disabling obsessive symptoms were relieved.

This case illustrates the profound effect of relief of the key anxiety upon a rather complicated neurotic pattern, as well as the fact that the two issues of the meaning of the illness and of the treatment were resolved satisfactorily.

Another patient, a 35-year-old man, was referred for a similar obsessive-compulsive state; his chief obsession was a fear that he would have a "pollution," as he put it, an ejaculation in public for no reason at all. Psychotherapy with another physician brought no improvement, so the physician then gave him 14 electroshock treatments, which served, however, only to increase his anxiety and further diminish his self-confidence. In this case, the anxiety aroused by his own interpretation of his illness and his interpretation of the significance of physical treatment was of crucial importance.

He had had a schizophrenic brother and was terrified that he himself might be schizophrenic, and hence the recommendation of shock treatment was confirmation of his worst fears, bolstered and intensified in turn by the therapist's own attitude toward shock treatment. This physician was primarily interested in psychotherapy, and in finally resorting to shock therapy he conveyed to the patient his pessimism about his ability to help him by psychotherapy. He decided upon shock therapy more or less as a counsel of desperation which for the patient also carried implications of rejection—the doctor was not giving the patient the best therapy he was capable of, but instead a treatment that seemed reserved for the worst cases, those he considered essentially hopeless. This situation added further dignity, power and emphasis to the symptoms, for the doctor instead of helping the patient borrow mastery from him, passed to him the feeling of his (the therapist's) powerlessness. Therefore, in a case very similar to the first one described, shock treatment was powerless, and in fact made the patient worse.

When the patient came to us he was sure his heredity was against him, and that he was doomed to remain very ill. He wanted further organic treatment, possibly with insulin in a hospital—that is, he wanted to be treated as the schizophrenic he feared he was. We decided instead to give him brief, goal-directed, and vigorously channeled psychotherapy, focused on the issues that his illness and its treatments had posed for him, and directed toward getting him back to work, showing him that his anxiety itself was really a mild illness. Although he first resisted, at our insistence he went back to work. Little by little he increased his duties. Eventually he accepted the idea that his illness was not so severe as he had thought, and he went into a full remission of his neurosis. Thus in implying to the patient that he was really not so seriously ill, we cleared up the issue of the illness, emphasizing instead the patient's innate capacities for mastery, reinforcing and strengthening his ego functioning.

These two cases serve to illustrate that anxiety per se appears to be the central disability and issue. Both patients were successfully treated mainly by alleviating their anxieties—in one case by physical treatment, in the other by brief psychotherapy aimed

at interpreting the illness to the patient in less fear-provoking terms. They illustrate, too, the extreme importance of the meaning the patient assigns to his illness and to the treatment. In the first case, shock treatment was given with the implication that it would rapidly enhance recovery by enabling the patient to benefit from psychotherapy much more swiftly. It was put to him without any implication that it denoted he was seriously ill, but rather that it was a worthwhile tool to help him master his illness. Shock treatment thus did not frighten him initially and this attitude was maintained by administering it in the most anxiety-alleviating manner with sodium pentothal anesthesia and relaxation by succinylcholine chloride, obviating most of the physical hazards. In the second case, the same physical methods failed because the psychological setting was grim and hopeless. Shock treatment, just as any other treatment, should be presented to the patient as a means of mastery over his illness, albeit borrowed mastery perhaps, conferred by the physician. It is very important that shock treatment be given with this implication of mastery over illness, a mastery first exerted by the physician and then capable of being eagerly picked up by the patient himself in handling the issues of his illness.

Now to turn to some of the other important issues in emotional illness.

The Issue of Perfectionism

Perfectionism is a remarkably frequent and characteristically recurrent issue among the conflicts that lead to depression; perhaps because it so readily exposes the patient to the narcissistic wounds to which he tends to succumb. Resolution of the issue of perfectionism resulting in easing of self-driving attitudes and relaxation of omnipotent strivings is therefore the most promising psychotherapeutic measure in our attempts at preventing relapse of depression, as emphasized elsewhere.[3] Recognition and resolution of this issue involve special considerations based on the patient's occupational aspirations and challenges.

The Issue of Envy

In certain depressions, feelings of incapacity, powerlessness and profound self-depreciation appear to be precipitated by invidious comparisons of self with others. In men, who are more trained and alerted to competition, this issue is usually quite apparent on the surface; a male patient may give it away by telling you about his successful brother-in-law in the first few sentences of the first interview. In women, probably because they are less conditioned to the problem of competition, this issue is less freely verbalized, but apparently occurs somewhat more frequently than in men; the object of the invidious comparison is usually some other woman in the neighborhood, a sister, or, less frequently, the husband.

A characteristic case of this type was that of a woman apparently quite successful in her adjustment to life, with a happy marriage, good children and devoted husband, in spite of which she suffered from recurrent depressions. Every time she became ill the issue appeared to be envy of another woman who seemed to have more facility in her interpersonal relationships—a woman perhaps with more hobbies and more ability in any sphere. The issue was "Why am I not as successful as this other woman?" This issue alone precipitated her into severe depressive symptomatology. The woman asked the question Job asked—"Why me, why did this happen to me, a good person?" And every time she asked the question she got another dose of anxiety. Although considerable psychotherapy had been tried, it made little headway. Shock therapy was followed by frequent relapses, sometimes beginning while the patient was still under treatment.

This 'allergic' response to envy may not be specific, but it is remarkably characteristic of these cases and even holds the explanation for their frequent relapses after shock therapy. Shock therapy usually has a very marked temporary beneficial effect upon each relapse, as long as it apparently interrupts a vicious circle in which everything in the environment makes the woman anxious, everything in the environment reminds the woman of her incompetence or of the incompetence which she feels in relationship to more successful women. But as soon as these patients become aware of a disruption of their capacity to cope with the environment, secondary to reduced awareness for memory contents which accompanies and follows in the wake of electroshock therapy,

they tend to relapse, sometimes with enhanced symptomatology.

A number of these women commented that shock therapy made them feel stupid, which was what had been bothering them in the first place. We concluded that conventional electroshock therapy given to this type of envious, competitive women was in itself the cause of their relapse, the memory defect making them feel further outclassed in possible competition. We found that whenever shock treatment given to an envious woman diminished her memory and her ability to adjust to other people in daily life, the experience of these intellectual deficits will lead to another vicious circle. This clue was then utilized by applying threshold unidirectional-current therapy followed by ample amounts of nonconvulsive stimulation[3] in order to minimize the memory loss and its effect of disrupting the patients' capacity to cope with the daily challenges of the environment, which they found so disruptive to their capacity for successful competition.

Shock therapy was thus prevented from aggravating the traumatic issue to which these patients were sensitive, and was instead utilized as a means of reinforcing their sense of mastery by proving to them that effective shock therapy could be given without disruption of memory and other intellectual daily performance functions. After that was proven to them, they improved remarkably with shock therapy and this time held their gains, for this method permitted them to retain what mastery they still had. Subsequent psychotherapy was aimed at restoring these patients' lost sense of mastery, and at the same time lowering their perfectionistic aspirations and need for superior competence. Patients so treated, who previously suffered annual relapses, have now held their recovery for as long as 6 years, a result vastly superior to any obtained by previous series of standard convulsive electroshock treatment alone.

It is therefore important to know and understand the issue or central emotional dynamics of the illness in order to choose the right procedure in shock therapy. Where the issue is guilt, oblivion is helpful; where the issue is feelings of incapacity, envy, powerlessness and profound self-depreciation, oblivion adds to the overwhelming effect of the issue and may cause further relapse. In the latter cases, a type of shock therapy that is non-disruptive to intellectual functioning is the treatment of choice. (In our successful cases we chose a treatment composed of one minute of threshold convulsive stimulation with unidirectional current followed by two minutes of nonconvulsive stimulation.)

The Issue of Acceptance

Another important issue is the issue of acceptance of the patient by the family. This involves not only treatment of the patient, but also treatment of the family and evaluation of the total family situation and the social setting. In these cases it is very important that each measure of physical treatment as well as of subsequent psychotherapy be definitely goal-directed, the goal being determined not only by the issues and treatment needs exhibited by the patient but also by that of the important persons in the patient's environment. For example: massive electroshock treatment by means of alternating current releases repressed capacity for affection. In this connection it is also important to channel the patient to the right family unit; for instance, away from parents toward husband, and own family and children. This, of course, also implies acceptance by the patient of his own independence. But unless the right channeling and the right goal for treatment are chosen, any treatment probably would fail.

Treatment, physical and otherwise, must be applied with full cognizance of the emotional issues involved in each case, the treatment needs of the patient, and the specific goals of therapy to be attained. Aimless shock treatment or aimless psychotherapy may lead to prolonged invalidism or exacerbation into more severe illness rather than recovery. It is therefore essential that the treatment goals be kept clearly in mind.

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Technique for the Modification of Electroshock With Succinylcholine

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More than 3000 electroshock treatments modified by succinylcholine have been given at the Institute of Living during the past two years. It is the purpose of this paper to review the use of this relaxing agent in the therapy of private psychiatric patients. Special reference will be made to the method of treatment with this relaxant, its efficiency and its safety both in application and in reduction of complications.

Since the introduction of convulsive therapies for the treatment of various psychiatric illnesses, efforts have been made to eliminate some of the undesirable complications attendant upon this type of therapy. The advent of electrically induced convulsions overcame much of the anxiety which occurred with metrazol treatments during the extremely unpleasant prodromal period preceding the seizure. However, the complications of fracture and dislocation remained. Initially, muscle relaxants such as curare, gallamine, decamethonium, and even spinal anesthesia were used to reduce the severity of the seizure, and thereby reduce the complications. Th use of these relaxants proved to be not only very time consuming, but in many instances more dangerous than the complications they were supposed to prevent. In recent years the introduction of derivatives of succinylcholine to modify the seizure has resulted in the biggest advance in the shock therapies, not only by vastly reducing the complications, but also by making the treatments much less anxiety provoking both to the patient and the therapist. The salts of succinylcholine are ultra-short acting muscle relaxants of the depolarizing type. Bourne et al. reported its use in 33 patients in 1952.[1] In a series of 512 treatments modified by succinylcholine, Holmberg and Thesleff reported the incidence of only one minor fracture.[2] Ardis and Wyllie[3] reporting no fractures occurring in 2,437 treatments given over a six months period. Only one fracture was reported by Wilson and Nowill in 1,045 treatments,[4] and this, a cervical fracture, was attributed to manipulation of the patient following treatment rather than due to the seizure itself. In their series, aspiration pneumonia and atalectasis occurred on two occasions. Stevens, Tovell, et al. reviewed 1,761 treatments given to 260 patients.[5] They noted the complete elimination of anoxia, fractures, and dislocations and the ability to treat patients safely, formerly considered physically unsuitable for electro-convulsive therapy. One death following anesthesia was reported.

From Institute of Living, Hartford, Conn.

Method

A complete physical evaluation including physical and neurological examinations, roentgenograms of chest, spine, and skull, electrocardiograms, and laboratory studies, is made of each patient prior to therapy whenever this is possible. All treatments are given in the morning, breakfast having been omitted and nothing by mouth permitted for four hours prior to treatment. Atropine sulfate, 0.8 mg. is given subcutaneously one half hour before the treatment. The patient is directed to lie down on a firm bed with pillows placed beneath his head and his back in order to slightly hyperextend his dorsal spine. Dentures are removed, and care is taken to insure that other objects such as candy and chewing gum have not been left in the mouth. Pentothal sodium in 2.5% solution is given intravenously until the patient is asleep. Usually 6 to 12 cc. (150 mg. to 300 mg.) are required, with 10 cc. (250 mg.) being the average anesthetizing dose. By using a two-way stopcock, the needle is left in the vein while the pentothal syringe is detached and replaced by another syringe containing the proper dose of succinylcholine. Approximately 20 mg. of suc-

is injected. This dosage may be varied depending on the relaxing effect of the drug on the individual patient. A rather marked degree of relaxation is sought. An attempt is made to give sufficient relaxant that convulsive movements are eliminated entirely except for mild clonic contractions of the orbicularis oris and oculi muscles. On occasions it may be necessary to give up to double the dose of succinylcholine as approximated above; in other patients less than half the estimated dosage is needed to produce the degree of relaxation desired. Doses of succinylcholine chloride ranging from 10 mg. to 100 mg. have been used, with the average dose being 60 mg.

While the pentothal and succinyl syringes are being interchanged, a nurse applies electrode jelly to the temples of the patient. The succinylcholine is then injected as rapidly as possible. The needle is withdrawn from the arm and the therapist moves to the head of the bed where he begins to inflate the patient's lungs with pure oxygen using a tight fitting face mask and exerting intermittent positive manual pressure on the rebreathing bag. Repeated inflation is continued until the muscle fasciculations produced by the succinylcholine have progressed from the head to the feet of the patient and until free inflation of the lungs by mild pressure on the rebreathing bag occurs. The oxygen mask is then removed from the face, and a soft tubular gauze mouth gag is easily inserted between the relaxed jaws of the patient. With the headband and electrodes applied and firmly held by an assistant, the stimulus is applied. Usually a second assistant firmly supports the arms and shoulders, although this is not considered to be essential once the proper modifying dosage of succinylcholine has been established. Two or sometimes three subthreshold stimuli are administered in rapid succession in order to delay and further soften the onset of the seizure.[6] Although Sargant and Slater[7] feel that such subshocks should be avoided because of their tendency to increase confusion and cause cardiac irregularities, we have seen no evidence of this.

The duration of the modified seizure is approximately the same as the unmodified form, as indicated by the length of contractions of the orbicularis oris and oculi. Toward the end of the seizure or immediately following its completion, the mouth gag is removed and a Guedel rubber airway is inserted into the patient's mouth. Rhythmic inflation of the lungs is again resumed in the manner described before. It has been noted that resumption of oxygenation prior to the completion of the seizure tended to prolong the duration of the seizure and the period of apnea following it. Artificial respiration is continued until the swallowing reflex returns. At this time saliva and any secretions which have accumulated in the patient's mouth are removed with an electric suction apparatus using a soft rubber or plastic catheter. Rhythmic oxygenation is again resumed until the patient's own respiratory activities have returned a few moments later. The patient is then turned on his side to allow any further secretions to run out of his mouth, and he is permitted to lie in bed in this position until completely recovered. The total time consumed from start to finish of the modified treatment varies from 6 to 10 minutes depending on the delay of return to normal respiratory activity by the patient. It has been observed that this delay does not seem to be a function of the dosage of succinylcholine that is administered, but rather varies with the individual patient regardless of the dosage used.

Over 95% of the modified treatments to be reviewed were administered by the authors, one of whom (E.D.) had special training in anesthesiology prior to instituting the use of succinylcholine at the Institute of Living. It is recommended, however, that unless one has sufficient training and experience in the use of pentothal and succinylcholine, the assistance of an anesthesiologist should be obtained. Cardiac and respiratory stimulants, laryngoscope, and endotracheal tube were at all times kept in readiness for emergency use in the treatment rooms.

Statistical Data

From early in January of 1953, when the first succinylcholine modified electroconvulsive treatment was given at the Institute of Living, until January 15, 1955, a total of

3316 such treatments were administered to 291 patients, 178 (61.2%) females and 113 (38.8%) males. The oldest patient was 83 years of age and the youngest was 13. The age distribution of these patients is shown in Table 1. The number of treatments per patient varied from a minimum of one to a maximum of 62 over the two year period. This resulted in an overall average of 11.4 treatments per patient. However, by arbitrarily eliminating from the totals those patients who received 30 or more treatments in the course of maintenance therapy, a revised average of 10.0 treatments per patient was obtained.

During the same period of time a total of 1975 "unmodified" electroshock treatments were given to 167 patients, most of whom received a light pentothal sodium anesthesia prior to treatment, but no succinylcholine. Neither were premedications, oxygen, or suction used. In this series there were 110 (65.9%) women and 57 (34.1%) men. The age distribution of this group is also shown in Table I, with the oldest being 70 years of age and the youngest 13. The number of treatments given per patient in this group varied from one to 100 over a two year period with the overall average number of treatments per patient being 11.8. By eliminating those patients receiving 30 or more treatments, as mentioned above, the revised average was 10.6 treatments per patient.

TABLE I

AGE DISTRIBUTION OF PATIENTS

Age	*Succinyl Modified Group*	*Unmodified Group*
10-19	2 (1%)	8 (5%)
20-29	38 (13%)	50 (30%)
30-39	54 (19%)	50 (30%)
40-49	69 (24%)	38 (23%)
50-59	64 (22%)	14 (8%)
60-69	46 (15%)	6 (3%)
70-79	16 (5%)	1 (1%)
80-	2 (1%)	0
	291 (100%)	167 (100%)

Complications

There were no serious complications encountered in any of the patients receiving succinyl modified treatments. In the entire series only one minor fracture occurred, this in a 28-year old woman who had suffered from an acute schizophrenic reaction during the post-partum period. A slight compression fracture of the body of the sixth thoracic vertebra occurred after she had received 26 modified treatments. The mild discomfort resulting from the injury disappeared within one week without definitive therapy. In the group of patients receiving electroshock therapy not modified by succinylcholine, fractures of the thoracic vertebrae occurred in four patients and a ligament tear with a minute cortical fracture of the left humeral neck in another. Thus, there was an incidence of 0.3 symptomatic fractures per 1000 treatments in the succinyl modified group compared with 2.5 fractures per 1000 in the unmodified group. It was also evident that complaints of muscle or joint pain occurred much less frequently in patients receiving succinylcholine. Complaints of pain severe enough to be sufficiently suspicious of possible fracture to warrant x-ray examination occurred almost four times more frequently in those patients receiving unmodified treatments.

There were no pulmonary complications in the entire series. The possibility of aspiration pneumonia and subsequent atalectasis or abscess formation was avoided by the strict restriction of oral intake prior to therapy, the pre-treatment administration of atropine, and the routine suctioning of secretions of each patient receiving succinylcholine modified therapy. Mild laryngospasm occasionally occurred during the recovery period following the treatment, but it was always possible to overcome this resistance with the positive pressure oxygen bag. It was never necessary to insert an endotracheal tube. In one instance severe and persistent laryngospasm occurred following a paroxysm of coughing in the induction phase of anesthesia prior to treatment. Following the administration of 40 mg. of succinylcholine sufficient relaxation occurred to make inflation of the lungs possible. Rhythmic inflation with intermittent positive pressure was continued uneventfully until the return of normal respirations a few minutes later. Severe laryngospasm in

this patient was prevented in subsequent treatments by administering Benadryl 20 mg. subcutaneously with the Atropine sulfate one half hour before treatment.

No cardiac complications were encountered using succinylcholine despite the fact that patients with fairly severe cardiac pathology were treated. A man in his mid-thirties suffering from an acute paranoid reaction following a mitral valvulotomy for rheumatic heart disease received four modified treatments within five weeks of his surgery. No untoward effects were noted despite evidences of auricular fibrillation and paroxysmal ventricular tachycardia on pre-treatment electrocardiograms. Remission from his disturbed psychiatric condition was obtained. Six modified treatments were given to a 50-year old man without ill effects despite electrocardiographic evidence of severe myocardial damage in addition to pre-shock roentgen findings of marked hypertrophic changes in the spine with wedge deformities of the bodies of the seventh and eighth thoracic vertebrae. Following 17 treatments with succinylcholine, a sixty-year old woman with severe myocardial damage symptomatically recovered from a marked agitated depression, which in itself could have proved disastrous to her from a cardiac standpoint. Among the many other patients with heart disease so treated, the only complication encountered that could possibly be related to modified shock therapy occurred in a 68-year old man who displayed evidence of myocardial ischemia and old myocardial damage and infarction on electrocardiograms prior to treatment. He was moderately hypertensive and subject to acute substernal pain on exertion which was relieved by rest and nitroglycerine sublingually. He received nine treatments with succinylcholine for a severe agitated depression showing much improvement. Two weeks after his final treatment he suffered an acute anterior myocardial infarction with secondary congestive heart failure necessitating bed rest and strenuous medical management for weeks prior to his return to normal activity. Because of the two-week interval occurring between his last treatment and the acute onset of his cardiac symptoms, it is not thought that the shock therapy had any direct precipitating effect on his myocardial infarction.

Numerous other patients received succinylcholine modified treatments without untoward effects on pre-existing physical disabilities. Three of the patients sustaining vertebral compression fractures on unmodified electroshock therapy were immediately switched to succinyl treatments without any interruption in their course of therapy. No progression of their fractures or increase in symptoms due to these fractures was encountered. A woman in her early thirties was placed on modified electroshock therapy within a few months of sustaining multiple fractures after wrecking her automobile in a suicide attempt. Because of a non-union of her fractured tibia, a tibial plate had been inserted and her left leg was encasted from toes to mid-thigh. She received eighteen modified treatments with very definite benefit on her hitherto persistent depressive reaction with suicidal ruminations. There were no harmful effects to her injured leg. Eleven modified treatments were given to a 56-year old woman having a severe retarded depression. Her course of therapy was started within a week of a fall in which she sustained a Colles' fracture of the right wrist. Both psychiatric and orthopedic results were excellent. In patients with fractures or bone or joint disease, there was neither aggravation of the original pathologic process, nor any intensification of symptomatology.

In an 83-year old patient diagnosed as chronic brain syndrome associated with cerebral arteriosclerosis, there was the constant danger of serious injury or fatal exhaustion due to her extremely confused, disturbed, resistive and agitated state. She was placed on electroshock therapy modified by succinylcholine with treatments given at weekly intervals. On this regime there has been a marked alleviation of the disturbed and agitated phases of her illness, with recurrence of her symptoms if the weekly treatments are omitted. She has received over thirty such treatments so far and no complications have been encountered. A 72- year old man who had been confused, forgetful, and suspicious, became progressively more agi-

tated, resistive, and negativistic after many months of hospitalization. He was out of contact with his surroundings, incontinent of urine and feces, and presented a serious feeding problem. He became physically debilitated and showed electrocardiographic evidence of severe myocardial damage. He received nine treatments modified by succinylcholine with astounding results. Complete remission from his alarming psychiatric condition, including the forgetfulness and confusion, was obtained. He was discharged from the hospital as recovered within two months of his course of therapy. Word from his family six months following his discharge indicated that none of his symptoms had returned.

No fatalities have occurred, and it is believed that numerous deaths have been avoided by this technique. In addition to the elimination of suicidal tendencies in some, it has permitted the treatment of others so physically ill that the application of electroshock could not otherwise have been considered.

Comment

From the material presented it appears evident that succinylcholine derivatives can be used to modify electroshock treatments with a much higher degree of safety and control than any of the relaxants used before. The drug acts rapidly following intravenous administration, and its dosage can be varied in the individual to produce the degree of muscle relaxation desired. The drug is rapidly destroyed by the body and no antidote is necessary. Regardless of the degree of relaxation, its effect on the respiratory muscles usually begins to subside within 5 minutes, so that prolonged resuscitation even with complete muscular relaxation is usually unnecessary. It should be noted that very occasionally prolonged periods of apnea may occur in certain patients. The therapist must be prepared to continue artificial respirations until the return of normal respiratory activities. During the two-year observation period reported, the average number of treatments per patient was approximately the same in both the succinylcholine modified and the unmodified groups, 11.4 and 11.8 treatments respectively. This would seem to indicate that the effectiveness of the electrically induced seizure is not reduced by the modification, despite the fact that many of the factors often hypothecated to be therapeutically beneficial in electroshock therapy, such as the excessive muscular activity, the transient hypoxia, and the fear and anxiety aroused by the treatment itself, have for the most part been eliminated.

The use of this relaxant has not only reduced the usual complications of electroshock therapy almost to nonexistence, but it has afforded a reasonably safe opportunity to treat patients in the older age groups and patients with serious physical disorders for whom such therapy was previously contraindicated. By utilizing electroshock therapy for these patients, not only has their psychiatric condition been improved and remedied and the duration of their hospitalization curtailed, but also their physical status has benefited by elimination of the possible adverse effect of a prolonged emotional disorder.

It has been our personal observation that much of the fear and apprehension by the patient concerning shock therapy has been eliminated by the modified treatments, although it is not possible to quantify this observation statistically. Numerous possible reasons could be given for this lessened apprehension. First, the patient awakens from his treatment feeling less tired and exhausted than following an unmodified treatment, with less likelihood of muscle or joint soreness. Second, forgetfulness and confusion seem less frequent or pronounced following modified treatments, possibly due to better oxygenation of the patient throughout the treatment. And third, because of the mildness of the seizure and the vast reduction in possible complications, there is less anxiety on the part of the therapist, and thus less possibility of transmitting this anxiety to the patient.

Probably the most serious possible complication of succinylcholine modified shock therapy exists during the post-treatment period following the return of normal respiratory activity. Since some degree of muscular relaxation still exists at this time, any manipulation of the patient, such as turning

him on his side or removing pillows from under him, should be done with extreme gentleness and caution. Otherwise, vulnerable bones and joints, especially the cervical vertebrae, which are as yet not fully protected by normal muscle tone may be injured.

Summary

A review was made of 3,316 electroconvulsive treatments modified by succinylcholine chloride and pentothal sodium, given to 291 private in-patients at the Institute of Living over a two-year period.

The method of using these modifying agents for shock therapy during this period has been described.

A comparison was made between the modified treatments and 1975 "unmodified" treatments given to 167 patients during the same period.

Succinylcholine chloride was found to be a safe and efficient relaxant to use with electroshock therapy. Although vastly reducing the usual complications of electroshock therapy, it did not inhibit the therapeutic effectiveness of the treatments.

The opportunity to treat patients for whom electroshock therapy would have previously been contraindicated was discussed.

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Community Services Program at Agnews State Hospital

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It is becoming increasingly clear to mental hygienists that the mental patient needs not only an adequate hospital treatment program which includes contact with normal community life, but also help in his readjustment to post-hospital life. That hospital and community can combine their efforts and facilities in a common team effort to meet this double need of the patient is being convincingly proved by the personnel at Agnews State Hospital and the citizens of the surrounding California communities.

A unique organizational structure is the backbone of this team effort, and includes a board of directors of community persons, a committee representing all the community groups actually doing volunteer work within the hospital, and a committee of business men who concentrate on paving the way for the discharged patient to return to a sound job situation.

When we think of volunteer services to a hospital, we think usually of the community person who comes to the hospital to visit wards, sponsor parties, bring entertainment, and other such activities. The numbers of such volunteers participating in the Agnews State Hospital program has set nationwide records for a State hospital program—840 volunteers representing 149 organizations in one evening sponsored Christmas parties for all 65 wards at the hospital in 1953. However, the emphasis in the community program at Agnews is not placed on these volunteer services as such. The emphasis is kept on the fact that the hospital is part of the community, and that it is part of the responsibility of every citizen of the nearby

From Agnews State Hospital.

communities to understand mental illness and constantly to interpret and help meet the needs of hospitalized or discharged patients. In turn, the hospital has become increasingly aware of its responsibility to the community; to train the volunteer, to make community leaders a part of hospital plans and programs, and to make available the best possible treatment for hospitalized members of these communities.

It is estimated that more than 60% of the approximately 372,000 persons living in the radius of twenty-five miles from the hospital have visited it at least once. This has been largely because of the volunteer orientation classes offered, the volunteers themselves, open house weeks, and community participation on the various volunteer committees, plus, of course, relatives of patients. Conversations with the average member of a local community reveal him as clearly aware of what a modern mental hospital is like, and with a concept of mental illness which sees the patient as a sick person without the blinders of stigma and superstition.

The community services program at Agnews State Hospital, the first such program in a California State hospital, has been developed carefully step by step by forward thinking staff and community members. Each step in the development of the program has come as the community itself began to express realization of a need for the next step to be taken. Beginning with the initial introduction of the idea of community participation in some type of volunteer activity at the hospital, the program has progressed through introduction of volunteers into every department at the hospital, the taking of patients to all community sport and recreation activities, to community concern with helping the released patient locate jobs and housing.

The beginnings of the program were simple. The San Jose Chapter of the American Red Cross had for numerous years been sponsoring volunteer activities at a nearby Veterans Administration Hospital. Chapter Manager Alistair R. Anderson was aware that similar activities could be invaluable at the State Hospital were it possible to set up some structure for training and supervising the volunteers as well as interpreting the hospital's program. It was felt that this would require the position of a full time hospital staff person, no provision for which existed in the state hospital system. However, Mr. Anderson introduced the idea to Dr. Walter Rapaport, then medical director and superintendent of Agnews, and to Dr. Robert P. Quirmbach, clinical director of the hospital, suggesting that a demonstration program might be undertaken at Agnews. Already a leader of planners for new rehabilitation programs within state hospitals, Dr. Rapaport carefully considered the plans as outlined, and shortly thereafter created the out-of-classification position of a coordinator of volunteer services. This person would undertake the supervision of a demonstration program of community services at Agnews. The coordinator was to become the liason between hospital and community, interpreting not only the hospital to the community, but also interpreting the volunteer to the hospital staff and patients. The community's lack of knowledge of the hospital was paralleled by the hospital's lack of understanding of what a volunteer could mean to a patient or what the community could do for the hospital itself. Staff and personnel regarded the introduction of volunteers with suspicion—all too aware that mishandled volunteer programs could disrupt Hospital procedure, introduce alien elements, and give the patient a feeling of being invaded.

The first organizational step took place when a group of fifty leading business men and women from the San Jose vicinity was invited to serve as members of an Advisory Council for Community Services to Agnews State Hospital. Members were selected, not because they represented specific organizations or agencies, but because they were proven leaders of civic affairs—people who could and would interpret and introduce the hospital's program to the community. Among the members of the first council were the district attorney, the mayor of San Jose, the manager of the Chamber of Commerce of San Jose, a city councilman, four ministers, a newspaper editor, a radio station manager, and leaders of every racial and religious group in the area. To this group were presented the plans for a demonstration community services program to Agnews. The

Council members were asked if they felt their community was interested and would support such a program. At its first meeting, the Council gave a unanimous vote of endorsement to the development of such a program.

The Red Cross was an established agency within the largest nearby community, San Jose, and had widespread facilities for publicity, and for the recruitment and training of selected volunteers. It was decided that the San Jose Chapter of the American Red Cross would be asked to act as coordinating agency to introduce the community services program at Agnews, dropping out of this role as soon as the program was on its feet. This meant, simply, in the initial stages of development, that the Chapter used its vast resources to gather community interest and support and organized the first volunteers sent to the hospital—a group of eleven specially trained Gray Ladies who started work on the wards in June, 1950. Other individual volunteers, clubs and organizations almost immediately began to take part. In December, 1950, the first of what was to become an annual Community Christmas Party was held. Organizations were asked to adopt a ward each and sponsor a party for the patients—refreshments, games, entertainment, and a gift for each person on the ward. 22 wards were adopted that Christmas as against 65 this year. The Christmas party set the participation of community groups into high gear for the year of 1951.

In the next year, almost every civic organization in the area began to express interest in the state hospital program. The mailing list from the Volunteer Services Office for the Christmas Party grew from less than one hundred organizations to more than five hundred expressing an interest. Red Cross uniformed volunteer workers became familiar sights on every ward, playing games, introducing simple crafts for the occupational therapy department, and helping transport patients to activities on the grounds. Many club groups adopted wards and gave monthly parties for them. All shopping for the women patients was taken over by the Red Cross Gray Ladies, who shopped for those too sick to leave the grounds and who took groups of others into San Jose each week to do their own shopping. Entertainers put on weekly pre-movie or Sunday afternoon shows. Volunteers taught music appreciation classes, showed movies on the wards, had sewing bees, and gradually expanded into every department of the hospital.

Groups of patients began to attend community functions. Auditorium and theater managers readily reserved sections of seats for such groups and expressed great care in no way to label the groups as "from the State Hospital." Volunteers and hospital personnel in attendance did not wear uniforms. The first group of such patients to leave the grounds attended the Santa Clara County Fair. One of this first group had been in the hospital for thirteen years without having had the opportunity to visit a community function.

This was the type of human interest story told the public, along with the sober, factual information that these activities helped get patients well, helped return them to useful citizenship again. Emphasis was not placed on touching heart strings but rather on the plain fact that mental illness is everyone's responsibility—that in the long run, acceptance of this responsibility not only makes possible greater facilities for the community member and his family, but also saves the taxpayer's dollar. The community began to put into practice the axiom that what one gets in a democracy, one must work for.

No volunteer is allowed to work at the hospital until he has taken the orientation class which is offered bi-monthly. All Committee members involved in the community services program are asked to take the class. This class consists of three hours of lectures by a staff psychiatrist, a psychologist, the supervisor of rehabilitation therapies, and the coordinator of volunteer services. Experience proved that the average lay person could assimilate only certain basic facts on first introduction to the mental hygiene field, and in these lectures the staff concentrates on a reiteration from various points of view of the principles of psychopathology, therapy, and the hospital's treatment program. Advanced classes and lectures are offered later when the volunteer is more aware of that with which he is dealing. These lectures

are publicized in the newspapers and are open to the public, as well as to the volunteers.

It is emphasized that volunteers are never considered substitutes for paid personnel, but only as an extension of established therapy facilities. In any program, it is vital that this be made clear to volunteers and personnel alike. The volunteer has a specific place within a hospital, whether the staff is maximum or not. Paid staff can no more replace the volunteer, and the feeling of community acceptance that he brings, than the volunteer can undertake to replace skilled, highly trained staff. All volunteers at Agnews State Hospital work under the direct supervision of the hospital department to which they are assigned.

In the developmental years, one of the first facts that became clear was that to have a strong program, the community must feel that the program is its own, and that the responsibility for its success, from the community side, rests on its shoulders. The Advisory Council, first asked to endorse the establishment of the program, became a board of directors for the volunteer services coordinator, advising and counselling on community feelings, community needs, and community resources.

The development of interest and participation of veterans' organizations in the state hospital program were important steps in 1952. Heretofore, the VFW, DAV, and American Legion Posts had felt that their responsibility lay entirely toward the Veterans Administration Hospital. Community pressure began to make their members more and more aware, first, of the fact that many veterans with non-service connected injuries or illness were in the state hospital, and secondly, that the mentally ill dependents of the veteran were in the state hospital. The veterans and military organizations joined the other community organizations in the hospital-community team, and many of the most outstanding programs and facilities have been made possible through their participation.

Of special interest was the influx of men volunteers at the hospital, both individually and as members of organizations. Orientation classes began to consist of almost as many men as women.

The need for a full time coordinator of volunteer service became an indisputable fact. An organized, day in, day out program of training, supervision, recruitment, recognition, and interpretation to the community and to the hospital had to be structured within the set-up of the state hospital. There had to be one person to whom the staff could turn for clarification of volunteer programs and needs; one person to whom the volunteer could turn for all the details of his function at the hospital—whether or not he served on the wards, on committees, or simply wanted a story for the newspapers. The permanent establishment of the position of coordinator of volunteer services became a goal toward which hospital and community alike began to work.

Busy personnel at the hospital found it difficult to meet the new needs for departmental supervision of volunteers, staff lectures, and participation in the volunteer program. To gain the services of the community, and to reach a point where advantages outweigh disadvantages in terms of hospital staff time, make necessary continual awareness that valuable community or volunteer participation must require an initial investment of time and effort before dividends are returned.

As the numbers of volunteers and organizations participating in the program increased, averaging 1500 volunteer hours worked each month, the need for greater communication between the coordinator of volunteer services and the volunteers became more apparent. It was at this point that the Service Committee to Agnews State Hospital was organized. The Service Committee was made up of representatives of all organizations, or individuals, who work on a regular basis at the hospital. Its monthly meetings are divided into two sections—one for hospital business and the other for volunteer business. The coordinator of volunteer services in the hospital section outlines new development at the hospital, presents current needs, and brings up any problems or suggestions that the hospital has relative to the volunteers. In the volunteer section of the meeting, the volunteers raise their own questions,

announce any changes or absences, and make plans for large functions such as the Christmas parties and the Fourth of July Carnival (a carnival complete with game booths and side shows, to which 2800 patients went this year). This Service Committee became a sub-committee of the Advisory Council.

As the community became familiar with the patient within the hospital, the community person began to be concerned with this same patient when he left the hospital. The first expression of this concern came when individual volunteers began to offer housing or suggest job facilities to individual patients—a situation which hit instant difficulties, because supervision was lacking. In 1952, a special project of the Bureau of Vocational Rehabilitation was established at Agnews, and the vocational officer assigned to this program became interested in the concern the volunteers were expressing. From this mutual awareness of the patient's needs developed the second sub-committee of the community services structure at Agnews—the Rehabilitation Planning Committee. This committee was organized in May, 1953, and was made up of representatives of community businesses. Its expressed concern was with the patient returning to the community, and with the need for doors to be open to him. This committee sees its first function as one of interpreting the hireability of the discharged mental patient to the employers of the community. It does place specific patients in specific jobs, but in a hospital with a population of 4600, the committee is aware that to try to serve as a placement agency is futile. What it can do is to educate its fellow employers. This the members do through personal contact, often introduction of a particular patient who might fit into a job they know is available and by bringing four to six employers from the community to each committee meeting. This committee has aroused the interest of vocational rehabilitation workers and institutions throughout the nation in the past six months. In a recent quote from the Monterey Herald, Mrs. Elise Willson, vocational rehabilitation officer, stated: "Interest in this San Jose committee has become nation wide, and it is being watched as an experiment which may save hundreds of thousands of dollars of tax money, and thousands of lives which might otherwise be wasted when 'outside' was too strange and unfriendly, and the patient returned, defeated."

The demonstration program at Agnews State Hospital has proved not only that community and State mental hospital can work together but that they should be a part of each other. Much has been done at this hospital, but community and staff alike are aware that much more still needs doing. Their goal is that in the future all of the services of the community services program will be available to every patient within the hospital. This means little change in the actual structure of the present program, but more expansion.

Perhaps the best summary of the program can be given in the words of Dr. Walter Rapaport, now director of the Department of Mental Hygiene for the State of California, in an agenda of a meeting of the Advisory Council at Agnews State Hospital:

"All of our California State hospitals have now introduced volunteer services into their programs, and it is with pride that we realize that is in large part due to the ingenuity of (the San Jose and Agnews) community and hospital that successful programs are being made easier at other hospitals. We can look with pride to the many benefits accruing to our patients, to the hospital, and the community, as a direct result of the community services program.

"One of the greatest handicaps suffered by hospitals for the mentally ill is the feeling on the part of the patients that they are largely forgotten and that no one recognizes them as sick people. Another obstacle to the patient's favorable progress has been the lack of a bridge between the hospital and the general community without the hospital. Both of these obstacles are being dissipated by the activities of the volunteer service group. In addition to this direct contribution, the experiences of this volunteer activity do and will continue to contribute greatly to the advancement of insight and knowledge concerning mental illnesses to the science of psychiatry."

The Philadelphia Neurological Society — Past, Present, and Future

CHARLES RUPP, M.D.

Several of my predecessors, perhaps permeated by that "apres moi la deluge" ennui, which afflicts many presiding officers in the last hours of their tenure, have, in their presidential addresses, after commenting upon our glorious past, expressed doubts regarding the present and future not only of our society but of neurology in general. Frequent reference has been made to the usurpations of the internists, neurosurgeons, and psychiatrists, and the therapeutic sterility of our specialty. Concern has likewise been expressed over the dwindling attendance at our meetings, the paucity of younger men interested in becoming members and the decrease in the number of papers presented at our sessions. These rather doleful prognostications have, on occasion, chilled the enthusiasm of interns and residents who have been our guests, created anxiety in some of our younger members and unfortunately influenced some to desert neurology for other specialities. As I listened to these addresses, the thought occurred: Is this pessimism justified? As the Philadelphia Neurological Society enters its 71st year, are the changes from the so called good old days, signs of imminent demise and dissolution or only manifestations of an orderly evolutionary process incidental to changing times and conditions.

Let us glimpse back 50 years to 1904 when under the presidency of Doctor Potts and the secretaryship of Doctor Weisenburg, our society then in its twentieth year, came to maturity. Doctors Mitchell, Dercum, Mills, Lloyd, Burr, Sinkler, Spiller and the many other great names of Philadelphia Neurology pursued their profession unvexed by the encroachments of psychiatrists and neurosurgeons. That year the total registration at the annual meeting of the American Medico Psychological Association, as the American Psychiatric Association was then called, was somewhat less than one hundred. Doctor Freud was little known outside his native Vienna. In Baltimore, Doctor Cushing was more concerned with the surgery of Potts Disease and in developing the Riva-Rocca apparatus so that blood pressure determinations could be made during surgical operations, than with brain surgery. Late that year, in a paper entitled "The Special Field of Neurological Surgery," he commented that although he had attempted to remove some brain tumors he had as yet no successful case to report and dwelt largely on the indications and techniques for "palliative trepanation." A majority of the presentations before our society consisted of case reports on such subjects as infectious neuritis, bulbar myasthenia, hysteria, hemiplegia following typhoid fever, mixed aphasia and traumatic cervical hematomyelia; to mention but a few. Papers based on a study of a reasonably large series of cases were relatively rare. The programs were long. The secretary recorded the minutes in longhand and listed the name of each individual member in attendance. This latter custom was hardly likely, however, to induce writer's cramp since attendance ranged between thirteen and twenty-five with an average of twenty save for the annual meeting when thirty were present. The society had not as yet inaugurated the custom of having an annual dinner. The majority of members lived in the center of the city, many within walking distance of the College of Physicians. The pattern of our local programs was repeated at the meeting of the American Neurological Association, where such topics as soul paralysis, psychoses of puberty, and the treatment of certain degenerations of the nervous system by massive doses of strycnine were discussed. Doctor Spiller presented his classic description of "Primary Degeneration of the Pyramidal Tract." A harbinger of a new era was the paper of Doctor James Jackson Putnam of Boston on "Three Cases of Cerebellar Tumor With Operation."

In contrast, today our programs are shorter. The number of case presentations has declined, largely I suspect, because of the institution of weekly conferences at Philadelphia General, Graduate, Jefferson and other teaching hospitals. Fifty years ago, aside from the local society, the only forums available for the neurologist were the American Neurological Association and the Section on Nervous and Mental Diseases of the American Medical Association. Today the Association for Research in Nervous and Mental Disease, the American Academy of Neurology, The American Association of Neuropathologists, The American Encephalographic Society, the numerous neuro-surgical societies and many other groups compete with the local societies for our essays. In spite of this greatly expanded competition, never, during my term as secretary was it too difficult to arrange an adequate program.

The growth in the number of neurological societies and committees, the expanded number of teaching conferences necessitated by residency training programs, and the stringent regulations of hospital accreditation boards have so increased the number of medical meetings that sparsity of attendance has become the concern of the officers of many groups, including even the Philadelphia Psychiatric Society. Although attendance at our meetings has been variable depending on many factors

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Presidential address, Philadelphia Neurological Society, January 7, 1955.

such as the content of the program, the weather, and conflict with other meetings, the average attendance, excluding the two joint meetings with New York and Washington has risen from 42 in 1946, to 60 in 1953. At the joint meetings, which happily have become annual affairs, attendance has ranged from 100 to 200.

Although during the past decade, our qualifications for membership have been increased by requiring all applicants to have either completed a neurological or neurosurgical residency or to have served for at least two years on the neurological staff of a recognized hospital, 64 new members have been elected. While this number is not vast, neither does it suggest that we are dying from lack of new blood. I think one of the assets of our society is that we have not become so large that it is impossible to know most of our fellow members with a reasonable degree of intimacy.

Relations between the neurologists and neurosurgeons in our society have always been cordial and harmonious. Our neurosurgical colleagues have contributed enthusiastically to our programs and served with distinction as officers. In our clinical contacts, the neurosurgical diagnostic tools such as ventriculography, myelography and angiography have been of invaluable aid. We admire the surgical skill which has often attenuated the suffering of and sometimes saved the life of many an unfortunate patient. The neurosurgeon's technical advances have made possible experimental approaches which have contributed valuable knowledge regarding the form and function of the nervous system. Without their help and cooperation much of the zest of the practice of neurology would be lacking. Notwithstanding the debt owed to the neurosurgeons, I do not, however, foresee the day when they will render the neurologist superfluous. At the Philadelphia General Hospital, where there are nearly 2000 admissions to the neurological service yearly, it has never been possible to obtain accreditation for a neurosurgical residency since the minimum number of major neurosurgical procedures does not accrue; not through any perversity or lack of diagnostic awareness on the part of the neurologists, but solely because less than two percent of all neurologic admissions are surgical in nature. I am sure that even the most sanguine neurosurgeon will agree with me that while cervical sympathectomy, meningo-rachidian phlebectomy, ablation of the premotor area, high cervical section of the pyramidal tracts, ligation of the anterior choroidal artery and ansotomy have been interesting experiments, they have not proved to be the ultimate answer to the problem of multiple sclerosis nor basal ganglia dysfunctions. Just as the incidence of thyroid surgery diminished following the advent of thiouracil and radioactive iodine, it is not fantastic to anticipate that eventually perhaps some other radioactive compound, an ultrasonic ray or even a relatively simple chemical may prove to be more effective for the patient with a spongioblastoma than the neurosurgeon's cautery.

Regarding our psychiatric colleagues I shall say little. Long ago they chose to separate from us to pursue their independent way. An attempt at rapprochement at the time of the institution of the conjoint meetings with the Washington group met with meager success. When one considers that the most significant psychiatric advances in the past twenty years have been the introduction of the shock therapies, psychosurgery, the conquest of the letic psychoses and the ability to produce, reveal and alleviate many of the psychiatric reaction types, through the use of diverse drugs, it is reasonable to conclude that the psychiatrists are a little closer to neurophysiology than they are willing to admit. When they experience a renaissance of interest in the functioning of the nervous system we shall be gratified. Until then, they are our friends, and we wish them God-speed.

As neurologists we have no right to smug satisfaction. Our deficencies have been many, probably the most glaring has been the discrepancy between our diagnostic acumen and our therapeutic abilities. In this deficiency, however, we are not entirely isolated. While it is true we lack adequate therapy for many of the degenerative, vascular, and developmental disorders of the nervous system, and even some of the infections, we are not the only therapeutic laggards. What we can do for multiple sclerosis and dystonia is commensurate with what the internist can do for leukemia and arteriosclerosis, the dermatologist for psoriasis and the pediatrician for celiac disease. Twenty-five years ago the then current neurologic texts recommended as treatment for myasthenia gravis, absolute bedrest, tonics, and adequate feeding; for postero-lateral sclerosis, removal of foci of infection, especially in the gall bladder, and three quarters of a pound of liver a day; for neuritis, diaphoresis, subcutaneous injections of strychnine and a strengthening diet; for migraine, cocanization of the sphenopalatine ganglion and 5% peptone solution; for meningitis repeated lumbar punctures, hot packs, saline purges and counter irritation either by mustard plaster or application of a cautery to the spine. For epilepsy, bromides, luminal and pituitary extract were in favor. There was no mention of prostigmine, liver extract, vitamin B-12, thiamine, nicotinic acid, ergotamine, the antibiotics, dilantin, mesantoin, tridione and many other drugs which today we use frequently and effectively. Neurologic therapy has not been completely sterile.

Some neurologic disorders, once common, such as postero-lateral sclerosis, tabes dorsalis, diphtheritic neuritis, tetanus, many of the meningitides and the neurologic complications of suppurative disease of the middle ear and mastoid are now rarely seen; not because they have been appropriated by other specialities but because preventive measures are available. In the future it may be anticipated that other neurologic diseases will suffer the same fate. Perhaps poliomyelitis will be the next to disappear.

As we survey the present status of both the Philadephia Neurological Society and of Neurology as a

specialty, we recognize that with the years have come changes but we need not despair nor feel too ashamed for we have made some progress for which we may be reasonably proud. At the same time we are aware of our shortcomings and realize that much yet remains to be done. Future progress may be slow because the nervous system, in its intricacy and complexity, reveals the secrets of its functionings and dysfunctionings grudgingly. To unravel further its puzzles we shall need all the aid our colleagues in the basic sciences of anatomy, physiology, pathology and chemistry can give us. We welcome and depend upon their cooperation but their activities will attain maximum efficiency only if they are coordinated by the clinician, since it is he who deals with the patient. Important neurophysiological data gleaned from experiments on primates, cats, frogs and other lower phyla unfortunately have had little or no clinical impact because of the great difference in the organization and complexity of the nervous system of the human being as compared with other animals.

Many fascinating problems regarding the functioning of the nervous system and its diseases stand as a challenge to the young fledgling in neurology who all too soon finds himself much too busy for his own health and comfort. In friendly cooperation with his neurosurgical, psychiatric and basic science colleagues he will share in the unravelment of many of today's mysteries.

I am sure that when the Philadelphia Neurological Society celebrates its centennial in 1984, its then members will, in surveying our present attainments, wonder how we could ever be so naive and ignorant. May they be charitable in forgiving our deficiencies and stupidities, for each of us, according to our talents, has striven to the best of our abilities, to make a little more comprehensible the functioning of the nervous system.

Conduct Problems in Children and Hypnosis

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Much too often the conduct of a child is judged as "good" or "bad" by the yardstick of the parents', teachers' or community's expectations. As a result, perfectly normal children can be classed as "problems" and brought to the psychologist simply because they are more active, or less submissive, or more curious about sex than their parents would like them to be.

Modern psychology, however, sees the *conduct* simply as an outward expression of a *personality,* and is far more interested in evaluating the healthiness of this personality than in judging the conduct from an ethical point of view.

A healthy personality is one that develops in a way which allows the child a maximum of personal well-being and inner development and enables him to make a good adjustment to the society in which he has to live.

Every child has the same natural goal: to gain mastery of his own abilities and to conquer a secure place as an individual in a community. The emotionally normal child is the one who goes toward this goal directly and happily, who sees the world as a source of good things, who maintains a high self-esteem, without any need to fear, repress or disguise his own feelings, who finds socially acceptable outlets for his biological and social needs, who develops tolerance to the inevitable frustrations in life and who achieves a satisfactory relationship with other people.

The emotionally sick child has the same goal—which in itself is natural and desirable—but the route toward it passes through a world that he sees as hostile, in which he loses his self-esteem, suffers anxiety and is afraid of expressing his feelings. The lack of satisfaction of his emotional needs creates such an intolerable tension that he is forced to find any way of satisfying them, and often chooses ways that are harmful to himself or socially unacceptable, which we call "conduct problems."

The conduct problems can be very different. In some cases, it is a disorder of the social adjustment, either of the aggressive, antisocial or delinquent type, or a withdrawal from social contacts. In other cases, the disorder appears on the intellectual level —an apparent feeble-mindedness in spite of a normal intellectual capacity. Others show emotional lability or non-organic abnormalities in the development of certain functions (speech, sphincter control, etc.). Still others have changes in the body functions without an organic cause to explain them sufficiently (psychosomatic diseases).

Nothing has been gained with the efforts to classify the conduct problems according to their outward expression. These efforts have been abandoned. A similar personality problem can lead different children to different kinds of conduct-reactions. For example, an insecure and timid child who suffers from the lack of affection from his parents may withdraw from social contacts, another child with a similar problem will have psychosomatic symptoms of the digestive system, and a third one will steal or lie. It cannot be said that one of these reactions is in itself more serious than the others, nor that the basic treatment will differ according to the symptoms. We are not as interested in the symptom as in the child.

If special cases of feeble-mindedness, psychoses or organic diseases of the nervous system are left out, the origin of practically all the paranormal conduct of the child lies within the home setting. The child who receives affection and understanding thereat, develops a system of security that allows him to face the world confidently, to adapt himself to unavoidable frustrations, and to behave as a normal child. On the contrary, the child whose emotional needs have not been satisfied by his family, looks at the world with distrust and reacts with abnormal conduct. Later in life, the first one will not be seriously affected by the unpleasant experiences he may have in school or within his social group, while the second one, insecure from the beginning, will be very sensitive to them.

It is very important not to be too pessimistic about the future of a child who has suffered emotionally in his first years of life, and not to consider him, as some authors do, condemned to be an inevitable emotional invalid for the rest of his life. A child has an amazing capacity for repair, in the psychic as well as in the biological aspect of his life.

The Diagnosis of Conduct Problems

When we speak of "conduct problems" without further specifications, we admit that the child does not have any medical or surgical diseases that can affect his behavior, or any severe psychosis. Consequently, we shall consider only the psychological diagnosis.

The symptoms are usually so impressive, that one is tempted to base a first diagnosis on them: cases of disobedience, lying, stealing, destructiveness, escapades, sexual misbehavior, withdrawal from social contacts, enuresis, etc. But this would be equivalent to dividing general medicine into chapters on cough, headache, pain in the shoulder, etc., and insisting that each symptom may have very different causes, and that the same cause can determine very different symptoms. Such diagnostic methods are not very useful for clinical work.

Almost the same can be said of the time-honored procedure of classifying according to syndromes, which many authors follow by tradition. When we speak of anxiety neurosis, conversion hysteria, anxiety hysteria, character disorders, etc., we only describe certain groupings of symptoms which are formed somewhat artificially and are rarely found in pure form. For example a child with a non-organic paralysis of a leg (typical conversion hysteria) is very likely to be at the same time timid and withdrawn (character disorder), and may also have abnormal fears of darkness, robbers, or animals (anxiety hysteria) and have "nervous" pains or vomiting (psychosomatic disorders). Though often very difficult to classify exactly, even when a classification-diagnosis can be made, how great a help is it in the treatment of the patient? As in diagnosis according to symptom, we have to say that different syndromes may require the same treatment, and that the same syndrome may have different causes and need different kinds of treatment.

Psychological tests can only measure the symptoms, and are as incapable of establishing a diagnosis by themselves as are any of the laboratory tests used in general medicine. They cannot lift the diagnosis to a higher level than the one that describes symptoms and syndromes.

Contemporary psychologists like Leo Kanner,[1] Tramer,[2] Rogers[3] and many others, insist that diagnosis should be seen as a means and not as an end in itself. Instead of cultivating the art of diagnosis for its own sake, we should put it in its due place be-

tween the examination of the patient and his treatment. It must function as a summary of the examination and as a guide for therapy. For therapy along psychobiological lines, the diagnosis must include knowledge of the problem, of the causes which have led to the problem and knowledge about the patient who presents it. Most useful for this purpose is a brief summary of the individual case, for example: "Restlessness and aggressiveness in an unwanted pre-school child pressed continuously by perfectionistic parents."

For the special treatment under hypnosis which we employ, and which shall be described later, we are particularly interested in settling a very special point: an evaluation of the emotional significance which the symptom has for the patient, his feelings of pleasure or displeasure, and the motivation the patient has for treatment. We distinguish three situations:

1) Children whose symptoms affect their personal well-being and who wish to get rid of them, as fears, enuresis, tics, nail-baiting, nightmares, stuttering, temper tantrums, lying or stealing, emotional tension, suffering and anxiety. These children have a strong motivation toward treatment.

2) Children who do not suffer with their symptoms, but consider them as normal or use them to obtain the satisfactions they seek, but whose conduct is harmful to others or antisocial, as seen in cases of rebelliousness, stealing, lying, enuresis as a means of vengeance, etc., without emotional tension. These children have little or no motivation for treatment.

3) Complex cases with both kinds of symptoms at the same time.

Naturally, diagnosis cannot be made from a list of questions and answers. It is made gradually, sometimes after many interviews, on the basis not only of what is said by the parents or the child, but also considering intonations, gestures and acts which reveal attitudes that are not verbalized.

Treatment

It has been said that modern psychotherapy began when the patient was given the opportunity to take part in his own treatment.[4] It is desired that the patient should "know" himself, "accept" himself, "realize himself as an individual." The means towards this end are many and they vary according to the school of psychology one prefers to follow.

Contemporary hypnosis is no longer a procedure in which the physician enforces his own convictions on a passive patient (treatment by direct suggestion). Erickson[5] has stressed that "in medical hypnosis there is a great need for the patient to participate actively in any reorganization of his psychic life," and in the last 10 years considerable literature has been published[6] on this new patient-centered hypnosis and on the various procedures used, such as relaxation, catharsis or abreaction, projective techniques, analytic techniques and induction of artificial complexes, etc., under a trance state. Thus hypnosis becomes a tool for a psychotherapy that can be adapted to the needs of each individual, since it increases greatly the speed and efficiency of the treatment.

In most children, we prefer to use simple hypnotic relaxation, intended to free them from anxiety and stimulation of their self-esteem. We do not give direct suggestions for the elimination of symptoms, since they do not produce lasting results. We do not strive to obtain a deep hypnosis, for it has been proven that efficiency of hypnotherapy is not necessarily parallel to the depth of the trance.

The child is an excellent subject, both for trance-induction and for hypnotherapy. Children from 5 to 15 are very easy to hypnotize. Hypnosis can be induced from the age of 2½, and I have a personal case, 3 years and 3 months old, suffering from nightmares, hypnotized within 10 minutes.

A still more important fact is that children have an extraordinary capacity for reparation and reorganization during the years of somatic and psychic development and that their habits are far less consolidated than in adults.

According to the motivation of the child toward recovery, we separate cases that respond easily to personal treatment with hypnotherapy, from cases which, lacking this motivation, require long and complicated treatment directed towards the child and his parents.

Children who suffer with their symptoms, and have anxiety, make up the group that responds to a few sessions of hypnotherapy. In these cases, the child has a deep desire to recover, and to free his natural healing powers it is sufficient to give him an interpersonal relationship ("rapport") capable of convincing him that the world is a friendly place, that he deserves his own self esteem, that his feelings are acceptable, and that he is capable of changing his conduct.

Hypnotism is ideal for creating this "rapport" or "connection" or "transference" or "parental-substitution," or however one might prefer to name this interpersonal relationship. The attitude of the therapist during the hypnotic induction is very similar to that of a mother who lulls her child to sleep. As a rule, children find the hypnotic induction extremely pleasant and readily accept the phrases that are intended to lift their self-esteem.

Spectacular cases of children with different neurotic symptoms (anxiety, fears, enuresis, stuttering, nail-biting, tics, etc.) or conduct problems (lying, stealing, disobedience) who at the same time had tension and emotional displeasure, recovered after two to four sessions of hypnotherapy directed exclusively toward stimulation of their self-acceptance and self-esteem. Gordon Ambrose,[7] one of the pioneer workers with contemporary hypnosis in children, has published many cases with similar results. It is most encouraging to see expressions of carefree happiness that a child shows after treatment and the pride of children who conquer enuresis.

In all of these cases the child received psychotherapy directly and in the majority of cases children recovered in spite of the persistence of mildly harmful influences in their environment; and it was found sufficient to give some simple advice to the parents. In relatively few cases the treatment was more difficult, either because the child's motivation for recovery was weaker, or because the parents possessed seriously harmful attitudes. In these cases, treatment required months and it became necessary to work also with the parents.

When children show no great desire to recover (our second group) their treatment becomes very difficult. In these cases the child's abnormal conduct is a reaction to his environment and is an emotional balance which the child does not wish to break. Treatment must consist of careful re-education, and an effort to motivate the child toward the desired conduct. Hypnotism is a great help for the interpersonal relationship required for this education. At the same time it is necessary to correct adverse influences of the parents. If this cannot be accomplished, treatment of the child is likely to be ineffective.

Sometimes the parents make simple mistakes in the education of the child, but their feelings toward the child are normal. In these cases treatment of the parents is easy, and it is only necessary to gain their confidence, so that they may accept the *advice, information,* or *interpretation* the physician desires to give them.

In other instances, parents are immature people, incapable of marital adjustment and of accepting normal responsibilities towards their children and their social group. Often they have not desired their children and are hostile to them. The hostility is rarely shown overtly, and is very often hidden under a cloak of perfectionism or oppressive overprotection. The parents can be treated successfully when they both suffer from their neurosis and their lack of a normal and satisfying relationship between themselves and with their children, and wish to improve, particularly if they are young. Hypnotherapy requires much more time when applied to adults rather than to children. On the other hand, treatment of the parents may be very difficult or even impossible when they obtain emotional satisfaction out of an attitude that is adverse to the child as: a father who eases his own tensions by being a tyrant in his home; a mother who finds great satisfaction in over-protecting her children; when there are no possibilities of obtaining substitute satisfactions from professional, cultural, or other sources; or when there are complicated family neuroses. In such cases, little or nothing can be obtained from direct treatment of a child who continues to live within such an environment.

In contrast to the rapidly successful cases of treatment mentioned before, there was

nothing we could do with a six year old girl who showed great aggressiveness toward her mother. The latter was extremely unstable, suffering from goiter, over-protective, and at the same time was oppressive to the child, and was surrounded by a deeply neurotic family environment. The best solution would have been to temporarily separate the girl from the mother, in order to allow the mother to revise her feelings more calmly toward the child and to permit the girl to adapt herself to society and authority within a more serene environment. But this solution was not accepted by the family.

The treatment of conduct problems in children is so complex, that even though hypnosis is a very useful psychotherapeutic agent, it has to be applied in different ways, and different results may be expected for each unique and individual patient.

Summary:

1. Contemporary psychology sees the conduct of a child as an outward expression of his personality, and is far more concerned with evaluation of the health of the personality than in judging the conduct itself.

2. Therefore, it is of little use to classify conduct problems according to symptom or syndrome presented, since similar symptoms may express different personality problems and similar fundamental disturbances may be expressed by other symptoms.

3. A modern trend is to make the diagnosis and classifications in a way that may function as a summary of the examination and a guide for therapy. For the special therapy that we employ, we are particularly desirous of evaluating the emotional significance which the symptom has for the child, and we divide our patients schematically into three groups:

a) Children whose symptoms affect their personal well-being and who show deep desire to get rid of them (fears, enuresis, tics, nightmares, stuttering, temper tantrums, lying or stealing, with suffering of emotional tension and anxiety).

b) Children who do not suffer with their symptoms, but consider them as normal or even use them to obtain the satisfactions they seek, but whose conduct is harmful to others or antisocial (rebelliousness, stealing, lying, enuresis as a means of vengeance, etc., without emotional tension). These children have little or no motivation for treatment.

c) Complex cases with both varieties of symptoms simultaneously.

4. We use hypnosis in the new way, seldom, if ever, direct suggestions to eliminate symptoms, and *always* require the patients' active participation in the reorganization of their own psychic lives. The procedure of hypnotic relaxation and stimulation of self-esteem works well with most children, and only special cases require the use of other procedures of *active* hypnosis as, catharsis or abreaction, projection, analytic techniques, induction of artificial complexes, etc.

5. Children are excellent subjects both for trance-induction and for trance-utilization. Their natural powers for reparation and reorganization are of considerable degree.

6. Where the child suffers from his symptoms and has anxiety, spectacular results are often obtained in two to four sessions with psychotherapeutic procedure under hypnosis. In a majority of these cases it is sufficient to give the parents simple advice.

7. When the child does not suffer from his symptoms, treatment is infinitely more difficult, and requires prolonged re-education which can be greatly aided by the hypnotic 'rapport," and intensive work with the parents. The result depends upon the possibility of correcting the parental attitudes which are harmful to the child.

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Book Reviews

PSYCHOSURGERY AND THE SELF. By Mary Frances Robinson, Ph.D., and Walter Freeman, M.D., Ph.D. Cloth. Pp. 118. $3.00. Grune and Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y. 1954.

The authors—a psychologist and a brain surgeon of renown—summarize from their respective individual viewpoints, some pertinent previously-arrived-at findings of psychological studies of other workers. Therewith they discuss their own hypotheses respecting implementation of relief from neurotic tension, paranoid states, intractable pain uncomplicated by mental disorders and an incident to certain malignancies, etc. . . ., and deal directly with the problem in their attempt to shed light upon the brain-mind-relationship between the frontal lobes and the complexity of the individual's personality.

The authors have hypothesized that lobotomized patients who have had varying types of frontal lobe disconnections should have varying and correspondingly quatitative limitation of capacity for feeling of self-continuity; and that patients who have had psychosurgery without having been psychotic should experience similar limitation.

The authors pose their conclusions following formulated tests of controlled interview techniques administered to standard lobotomized patients, to those who had undergone other types of psychosurgery and to unlobotomized control subjects. The authors suggest that the personality alterations in patients who have been treated by other types of psychosurgery appear qualitatively similar but differ greatly in degree from those that have been subjected to the prefrontal method. Although their research began with an attempt to clarify the phenomena of psychosurgery, the authors' experiments have dealt with empirical conclusions which as a ground-work should be so considered.

CURRENT THERAPY: Edited by Howard F. Conn, M.D., and other Consulting Editors. Cloth. $11.00. Pp. 692. W. B. Saunders Company, West Washington Square, Philadelphia, Penna. 1955.

The previous (1954) edition of the book has been reviewed by this writer. Then as now I continue to find the scope of the book worth while. It serves as a handy reference to an abundant storehouse of therapeutic methodology which reflects the experiences of many contributors of outstanding ability in their respective fields.

As I have said in 1954, the scope of this type of reference work could be markedly enhanced by a summarized restatement of the condition or disease for which coincident treatment is outlined. Since the choice of treatment rests upon an accurate recognition of the underlying condition, a short resumé of the cardinal diagnostic features of the clinical entity for which the therapy is offered, would make for both greater utility and closer therapeutic collaboration between the offerer and the medical attendant.

In reviewing the present revision, I find that a number of medical conditions which appeared in the previous edition under the following entities have been deleted. Some of them are: Dengue, Weil's disease, Simmond's disease, Yaws, Yellow fever, Ocular allergy.

The section titled Roster of Drugs continues to remain incomplete and could become more serviceable in a future edition by including therein many useful drug absentees and thereby avoid the necessity of consulting collateral sources for the latters' information. At the same time considerable space has been used for cataloguing details about certain proprietary pharmaceuticals (even to such minutiae as the peculiarities of sizing and of describing containers and packaging; e.g. tablets, flavoring, foil-wrapping, bottles, vials, boxes, cones, jars, capsules etc.). The book makes no reference to advertising and the present edition now carries the following slogan on each page of the Roster of Drugs: "See Index of Subjects for reference to drug uses described in the text." This reviewer suggests that the space in this section could have been utilized to much greater reader advantage had the deleted textual material been retained; and had there been included a fuller list of drugs instead of sounding off detailed itemizations of certain pharmaceuticals at the space expense of the bare mention of others and of the complete deletion of others. Whether or not the handiness of the present volume warrants it, in view of the foregoing suggestions for future revisions, it should be noted that this 1955 edition contains 206 pages less than did its 1954 predecessor.

BOOKS RECEIVED

DISEASES OF THE NERVOUS SYSTEM. By F. M. R. Walshe, M.D., D.Sc., F.R.S., Fellow of the Royal College of Physicians of London, Fellow of University College, London. Cloth. Pp. 357, with photographs and drawings. $7.00. The Williams & Wilkins Co., Mt. Royal and Guilford Avenues, Baltimore 2, Maryland, 1955.

ATLAS OF HUMAN ANATOMY. By Werner Spalteholz. Edited by Rudolf Spanner, Professor of Anatomy, Cologne. Fifteenth edition. Parts I and II. Cloth. $11.50 per volume. 1365 plates. Little, Brown and Company, Boston, Mass., 1953.

TEXTBOOK OF PHYSIOLOGY. Edited by John F. Fulton, M.D., Sterling Professor of the History of Medicine, Yale University School of Medicine. Seventeenth edition. Cloth. $13.50. Pp. 1275, with 600 illustrations. W. B. Saunders Company, West Washington Square, Philadelphia 5, Penna., 1955.

THE VERTEBRATE BODY. By Alfred Sherwood Romer, Alexander Agassiz, Professor of Zoology and Director, Museum of Comparative Zoology, Har-

vard University. Second edition. Cloth. $7.00. Pp. 644 with 390 illustrations. W. B. Saunders Company, West Washington Square, Philadelphia 5, Penna., 1955.

NEUROLOGY. By S. A. Kinnier Wilson, M.A., M.D., D.Sc. (Edin.), F.R.C.P., Edited by A. Ninian Bruce, F.R.C.P. (Edin.), D.Sc. (Edin.) M.D., F.R.S. (Edin.), Lt.-Col. R.A.M.C. Second edition. Cloth. 3 volumes. $37.50. Pp. 2060 with illustrations. Williams & Wilkins, Mt. Royal and Guilford Avenues, Baltimore 2, Maryland, 1955.

THE YEAR BOOK OF NEUROLOGY, PSYCHIATRY AND NEUROSURGERY. Edited by Roland P. Mackay, M.D., S. Bernard Wortis, M.D., Percival Bailey, M.D., and Oscar Sugar, M.D. Cloth. $7.00. Pp. 619 with 97 illustrations. Year Book Publishers, Inc., 200 E. Illinois Street, Chicago 11, 1955.

THE MASK OF SANITY. By Hervey Cleckley, M.D., Professor of Psychiatry and Neurology, Medical College of Georgis, Augusta, Georgia. Third edition. Cloth. $7.00. Pp. 578. The C. V. Mosby Company, 250 Park Avenue, New York 17, N. Y., 1955.

CIRCUS DOCTOR. By J. K. Henderson, D.V.M. Chief Veterinarian of the Ringling Brothers and Barnum & Bailey Circus. Cloth. $3.50. Pp. 238. Little, Brown and Company, Boston, Mass., 1951.

ION EXCHANGE AND ABSORPTION AGENTS IN MEDICINE. By Gustav J. Martin, Sc.D. Cloth. $7.50. Pp. 333, with illustrations. Little, Brown and Company, Boston, Mass., 1955.

MANUAL OF CHILD PSYCHOLOGY. Edited by Leonard Carmichael, Secretary, Smithsonian Institution. Second edition. Cloth. Pp. 1295. John Wiley & Sons, Inc., 440 Fourth Avenue, New York, N. Y., 1954.

THE TECHNIQUE OF PSYCHOTHERAPY. By Lewis Robert Wolberg, M.D., Director, Postgraduate Center for Psychotherapy. Cloth. $14.75. Pp. 880. Grune and Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1954.

ANATOMY REGIONAL AND APPLIED. By R. J. Last, M.B., B.S., F.R.C.S., Professor of Applied Anatomy, Royal College of Surgeons of England; Examiner in Anatomy for the Primary Fellowship Examination of the College; Examiner in Anatomy for the Licence in Dental Surgery, and past Examiner in Anatomy for the Fellowship in Dental Surgery of the College; Supt. of Dissections and past Examiner in Anatomy to the Examining Board in England; Examiner in Anatomy and Physiology in the London Foot Hospital. $10.00. Cloth. Pp. 665, Little, Brown & Company, Boston, Mass., 1954.

A HANDBOOK OF DISEASES OF THE SKIN. By H. O. Mackey, F.R.C.S.I., L.R.C.P.I., D.P.H. (Univ. Dub.), L.M., F.R.I.A.M. Cloth. Pp. 208, $3.00, St. Martin's Press, Inc., 103 Park Avenue, New York 17, N. Y., 1953.

EPILEPSY AND THE FUNCTIONAL ANATOMY OF THE BRAIN. By Wilder Penfield, M.D., F.R.C.S. and Herbert Jasper, M.D., Ph.D. $16.00. Cloth. Pp. 896, Little, Brown & Company, Boston, Mass, 1954.

TRIAL OF JOHN THOMAS STRAFFEN. By Letitia Fairfield, C.B.E., M.D., and Eric P. Fullbrook, Clerk to the Justices, Reading, England. Cloth. $3.25, Pp. 299, British Book Centre, New York, N. Y., 1954.

CLINICAL ASPECTS OF THE AUTONOMIC NERVOUS SYSTEM. By L. A. Gillilan, Ph.D., M.D., Associated Professor of Anatomy, University of Pennsylvania. $6.50, Cloth, Pp. 316, Little Brown & Company, Boston, Mass., 1954.

DOCTOR AND PATIENT AND THE LAW. By Louis J. Regan, M.D., LL.B., Member California Bar, Professor of Legal Medicine, College of Medical Evangelists, $10.50, Cloth. Pp. 545, The C. V. Mosby Company, 250 Park Avenue, New York 17, N. Y., 1949.

AN INTRODUCTION TO PATHOLOGY. By G. Payling Wright, D.M., F.R.C.P., Professor of Pathology, Guy's Hospital Medical School, University of London. $7.50, Cloth. Pp. 569, Longmans Green and Co., Inc., 55 Fifth Avenue, New York 3, N. Y., 1954.

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